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| 10/807,088      | 03/23/2004  | Geoffrey Burke Bauer | 10543-069           | 3841             |

7590 10/17/2005  
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EXAMINER

MANCHO, RONNIE M

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3663

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/807,088

Applicant(s)

GEOFFEY BURKE BAUER ET AL

Examiner

Ronnie Mancho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/24/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Claim Objections*

1. Claim 3 is objected to because of the following informalities: In claim 3, lines 1, the statement "the system of claim 3" needs to be changed because claim 3 cannot depend on itself. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-17 rejected under 35 U.S.C. 102(e) as being anticipated by Tseng et al (2005/0149240).

Regarding claim 1, Tseng et al (abstract; figs. 1-8) disclose a system for estimating body states of a vehicle comprising:

at least two sensors mounted to the vehicle, the sensors generate measured vehicle state signals corresponding to dynamics of the vehicle (sec 0023 to 0028);

a signal adjuster (66, 68, fig. 4) which transforms the measured vehicle states signals from a sensor coordinate system to a body coordinate system associated with the vehicle (sec. 046 to 0050); and

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a filter (74, fig. 4; sec 0049) which receives the transformed measured signals from the signal adjuster (66, 68) and processes the measured signals into body state estimates (figs 4, 6-8) of the vehicle.

Regarding claim 2, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the filter includes a model of the vehicle dynamics and a model of the sensors, the state estimates being based on the transformed measured signals and the models of the vehicle dynamics and sensors.

Regarding claim 3, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the filter includes an estimator, an algorithm being implemented in the estimator to process the transformed measured signals and the models of the vehicle dynamics and sensors and generate the state estimates.

Regarding claim 4, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the sensors are linear accelerometers.

Regarding claim 5, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein one of the sensors is an angular rate sensor.

Regarding claim 6, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the sensors include two accelerometers that measure accelerations in a first direction and two accelerometers that measure accelerations in a second direction.

Regarding claim 7, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 6 wherein the sensors further include two accelerometers that measure accelerations in a third direction.

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Regarding claim 8, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the sensors include two accelerometers that measure lateral accelerations and one sensor measures the yaw rate of the vehicle.

Regarding claim 9, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 8 wherein the sensors include two accelerometers that measure the vertical accelerations of the vehicle.

Regarding claim 10, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the state estimates relate to the vehicle's lateral velocity, yaw rate, roll angle, and roll rate.

Regarding claim 11, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the system of claim 1 wherein the signal adjuster further provides compensation for gravity biases associated with the sensors.

Regarding claim 12, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose a method for estimating body states of a vehicle comprising:

generating measured vehicle state signals corresponding to dynamics of the vehicle with at least two sensors (fig. 4);

transforming the measured vehicle states signals from a sensor coordinate system to a body coordinate system associated with the vehicle (sec. 0046-0053); and

processing the measured signals into body state estimates of the vehicle (sec. 0054-0057).

Regarding claim 13, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the method of claim 12 system of claim 1 wherein the processing includes modeling the vehicle dynamics and the sensors.

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Regarding claim 14, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the method of claim 12 wherein the generating includes measuring linear accelerations.

Regarding claim 15, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the method of claim 12 wherein the generating includes measuring an angular rate of the vehicle.

Regarding claim 16, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the method of claim 12 wherein the state estimates relate to the vehicle's lateral velocity, yaw rate, roll angle, and roll rate.

Regarding claim 17, Tseng et al (abstract; sec. 0043-0053; figs. 1-8) disclose the method of claim 12 wherein the transforming includes providing compensation for gravity biases associated with the sensors.

#### *Communication*

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronnie Mancho whose telephone number is 571/272/6984. The examiner can normally be reached on Mon-Thurs; 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571/272/6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ronnie Mancho  
Examiner  
Art Unit 3663

10/5/05

  
JACK KEITH  
SUPERVISORY PATENT EXAMINER